ABSTRACT OF THE DOCTORAL THESIS

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THESIS TITLE: THE BIOLOGICAL MODEL USED IN MANAGEMENT OF WHEELCHAIR BOUND BASKETBALL PLAYERS TRAINING

Key words**: biological model, workout, wheelchair bound basketball players**

The thesis is structured on three parts; it contains 18 chapters and a volume of annexes, having bibliographic references comprising a number of 187 works with Romanian and foreign authors.

The paper is divided into three parts:

Theme importance

The problems of motor handicap persons were always a concern for international organizations, though their policies were limited to material or financial support.

The first international policies on sport appeared grace to European Council, which launched in 1976, a policy about "Sports for all", stating that each one has the right to practice sports. Two years later, The United Nations for Education, Science and Culture Organization (UNESCO) adopted the international cart of physical

education and sport, stating that every person has the right of being part of sportive activities, regardless the gender, age or state of health.

Year 1981 was declared by UNESCO the international year of disabled people, which made the world more sensible to handicap and issues that disabled people faces every day.

The period 1981 to 1991 was declared the decade of disabled people, after that the United Nations Organization (UNO) developed a set of rules called Rules of equal chances for disabled people. Some of these international instruments allowed the practice of sports in the world, and forced the elaboration of policies in different sides of the world.

In Europe, the year 2003 was declared The European year of disabled people and it was proposed an adapted sports Decalogue. The year 2004 was declared The European year of education trough sport.

In December 2006, UNO adopted the United Nations Convention, about disabled people rights. The convention's goals were the promovation, protection, and the assurance of the human rights on equality.

This Convention stipulates in the art. 30.5 the right of equality of disabled people, among other individuals, at sportive and leisure activities.

In this context, the Convention is considered a crucial step in resizing the perception on disabled people, and in the mondial protection of their rights.

Theme choosing motivation:

The purpose of this thesis was to reflect a less known contemporary life reality, in fact the training of disabled people in wheelchair basketball, based on the particular biological model, which I intended to create.

So, I intended to contribute directly in breaking the social barriers, in raising the level of motric and sportive performances, resulting in improvement of quality life of these disadvantaged people.

I have to mention that no literature has mentioned this subject, so this represents the originality element.

PART I - Theoretical, conceptual and methodological fundaments, in the biological model used in order to guide the sportive training of wheelchair basketball players

PART II - Preliminary research on the biological model used in order to guide the sportive training of wheelchair basketball players

The subjects included in this study were monitored over a period of 3 months.

Before the study started, the subjects were tested for all parameters (T1): anthropometric (weight, height, fat) and functional.

The number of dynamic testing varies by the changes possibilities, as a result of the installation of the sportive training cumulative effects.

The anthropometric parameters were measured at the end of the given period (T2); meanwhile the functional parameters evolution was a dynamic one. Thus, the heart rate was monitored before each training in clinostatism and in sitting we obtained an impressive number of values, thus, for simplification reasons of calculation, we noted only the values recordered after every month of training, stating in values T2 (after a month), T3 (after two months) and T4 (after three months of training). The same formula was used for the evaluation of systolic and diastolic arterial pressure, and of Dorgo

Index. In order to measure the effort heart rate was executed an adapted effort exercise targeting sportive possibilities. The exercise was a test of moving 60 meters in a wheelchair. After the end of the exercise the heart rate was measured. This task was made in the preliminary time twice the initial testing (T1) and final testing (T2). Obviously, in the event of receiving incompatible values with the requested effort level for the wheelchair bound basketball players, we took personalized measures. (The cessation of the training, lowering the effort intensity, etc.)

In conclusion, the effects of scientific guidance of sportive workout regarding the performance at studied subjects we consider that some of the functional parameters that were measured, presented important statistic modifications. Thus, baseline heart rate, systolic arterial pressure in clinostatism and seated were consistently reduced; also Dorgo index gained a statistic growth in 9 out of 10 sportsmen.

PART III - Contributions to detection of the biological model used in guiding the training of wheelchair bound basketball players.

The aim of research

In this section of the thesis, based on the conclusions from the preliminary study, we aimed to set the medico-biological criteria, in order to identify the biological model for guiding the sportive training of wheelchair basketball players. This was a hard step, because the sport represents a very important part of life for this kind of people, having polivalent aptitudes.

Hypothesis

In this context, starting from the premise that the biological model used in training guiding of wheelchair basketball players is different for valid persons, we launched the following hypothesis:

1. ***Anthropometric parameters can be influenced only a little by exercise through physical effort specific in wheelchair basketball.***

2. ***The improving of functional parameters of wheelchair basketball players leads to an optimised recovery, thus giving a scientific basis to the specific training.***

The permanent individualization of physical effort in sportive training for motor disabled persons, wheelchair basketball players, as their biological model, created on the basis of medico-biological set of criteria, which we will propose in this practical application, may represent a principal factor of progress to the sportive performances, regarding an objective feed-back; it's a guideline for eventual corrections.

The effort must be adapted to the level of the motor potential, depending on severity, type of deficiency and by the individual reaction at the specific effort.

The medico-biological criteria for guiding sports training for valid persons have been taken as landmarks in stating the medico-biological criteria for motor disabled people.

Finding it was absolutely necessary and it resulted from the impossibility of direct measurement of some anthropometric parameters, and also from the fact that some of the functional parameters can't be determined directly, but they can be determined indirectly through mathematical formula.

We have to state that, although internationally, the equipment of sportive medicine health centers is latest generations, which erases the barriers of paraclinical investigation between valid persons and motor disabled people. We didn't find, studying the specialty bibliography, any study regarding this theme.

The intern specific conditions determined us to try and establish some medico-biological criteria applicable to motor disabled persons. The first step was justified by rising need of this category of people to play sports in safety conditions.

The medico-biological criteria applied to valid sportsmen cannot be applied to motor disabled people, because the imposed effort demands are different and it creates different performance models.

In this context, we wanted the investigation of a group of wheelchair bound sportsmen, which played basketball.

We made a series of anthropometric and functional measurements in order to establish the level of physical and functional development.

The papers originality consists in the attempt of establishing a biological model in the guiding of sport training for these kinds of subjects. Certainly, the given data will be a landmark in guiding sport training for wheelchair basketball players, which is a disadvantaged social category.

Theoretical conclusions

Sport for people with disabilities (long kept away from various sports practices) shouldn't limit itself to a small number of apprentices. Sport should be accessible for everyone.

Specialty bibliography which addresses the general problem of sport training for motor disabled persons, is reduced, thus sport trainings are often guided with a lack of scientific criteria.

Medical guiding of workout training for motor disabled persons must be based on the subjective information and psychic reactivity to various stimuli. The permanent study, the knowledge of all particularities of sportsmen through medical control, to compare the physical and functional ability with training efforts and through organism reactions to these efforts are absolutely necessary.

Experimental conclusions

The effort made must be adapted to motor potential, depending on severity, type of deficiency and by the individual reaction at the respective effort.

The medico-biological criteria for guiding sports training for valid persons have been taken as landmarks in stating the medico-biological criteria for motor disabled people, but these criteria applied to valid sportsmen cannot be applied to motor disabled people, because the imposed effort demands are different and it creates different performance models.

The establishment of the model based on medico-biological criteria of training guiding for motor disabled people was absolutely necessary and it resulted from the

impossibility of direct measurement of some anthropometric parameters, and also from the fact that some of the functional parameters can't be determined directly, but they can be determined indirectly through mathematical operations.

Medico-biological criteria of training guiding for motor disabled people playing wheelchair basketball were systematized as anthropometrical and functional.

Although the effort was guided based on the percentage of maximum heart rate, calculated on baseline heart rate (Karvonen formula) and we obtained values that indicates an effort mainly in the zone of light resistance, the subjects have sensed (on the Borg scale) that this type of effort is in the zone of fundamental endurance, which indicates the fact that they have significant energy reserves, that will allow the growth of effort intensity and the growth of functional parameters.

We succeeded in this context, to create a biological model, which can be perfected through a well guided training, based on scientific data. This aspect represents the originality mark for this paperwork.